



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,032	11/17/2003	Tooru Taima	4105-26	9724

23117 7590 03/21/2007
NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER

TORRES, JOSE

ART UNIT	PAPER NUMBER
----------	--------------

2624

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/713,032

Applicant(s)

TAIMA, TOORU

Examiner

Jose M. Torres

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 03/26/2004 and 05/25/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
 - Page 1 line 1: The RELATED APPLICATION INFORMATION Section is missing. This Section should include the foreign priority claimed under 35 U.S.C. § 119 (a) – (d) to application No. JP 2002-332137 filed on November 15, 2002.
 - Page 2 line 24: "VBV buffer" should be -- Video Buffering Verifier (VBV) buffer --

Appropriate correction is required.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claim 4 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim limitation "A coding program product" recited in line 4 is directed towards a program *per se*, which is functional descriptive material and can only be considered statutory when embodied on a computer readable medium so that its functionality can be realized by the computer.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 4 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakagawa et al. ("DCT-Based Still Image Compression ICs with Bit-Rate Control", IEEE Transactions on Consumer Electronics, Vol. 38, Issue 3, August 1992, pp. 711-717).

Re claims 1 and 4: Nakagawa disclose a coding method/program product of image information, comprising, which makes a computer execute, by executing on the computer ("New Algorithm", Page 711, Section 1 'Introduction' Second Col. lines 13-19 and Page 711, Section 2 'Functional Specifications' lines 32-34, "DCT compression and coding system with the ability to handle bit-rate control"): a feature extraction process ("First scan") which quantizes and codes whole image information subjected to coding to extract feature information ("Activity", Page 712, Section 3 'System Composition', Third Paragraph); a coding quantity predicting process which quantizes and codes the image information, while changing a quantizing factor based on the feature information, to determine a proper quantizing factor (Page 714, Section 4-3 'Quantization Table'); and a coding process which utilizes a determined quantizing factor and quantizes and codes the image information output a result as coded output data (Pages 712-

Art Unit: 2624

713, Section 3 'System Composition', Third Paragraph and Page 714, FIG. 4, "Output of the JPEG Section").

Re claim 5: disclose a coding apparatus of image information (Page 711, Section 2 'Functional Specifications' lines 32-34, "DCT compression and coding system with the ability to handle bit-rate control") comprising: a quantizing unit (FIG. 4, "Quantizer") which quantizes the image information by a predetermined quantizing factor (Page 713, Section 4-1 'Overview', First Paragraph); a coding unit (FIG. 4, "Huffman Coding") which codes quantizing data generated by the quantizing unit (Page 713, Section 4-1 'Overview', First Paragraph); a feature extraction unit (FIG. 4, "Bit-Rate Control Section") which quantizes and codes the whole image information and extracts feature information (Page 714, Section 4-4 'Activity'); and a coding quantity predicting unit (FIG. 4, "Coding Control") which quantizes and codes the image information, while changing a quantizing factor and determines a proper quantizing factor, based on the feature information, wherein the quantizing unit and the coding unit utilizes the proper quantizing factor to quantize and code the image information and outputs a result as coded output data (Pages 714-715, Section 4-3 'Quantization Table' and Section 4-4 'Scale Factor K').

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa et al. in view of Auyeung et al. (US 5,677,969). The teachings of Nakagawa et al. have been discussed above.

As to claim 2, Nakagawa et al. further teaches the coding quantity predicting process comprises: a factor setting process which sets the quantizing factor of each frame based on the feature information ("Scale Factor *K* calculation", Page 713, Section 4-1 'Overview', Right Hand Col. lines 13-27); an experimental coding process which utilizes a set quantizing factor and quantizes and codes of the image information to store result data of coding in a buffer ("encoding using desired quantization table", Page 714, Section 4-3 'Quantization Table').

However, Nakagawa et al. does not explicitly disclose a factor changing process which changes the quantizing factor of each frame when an overflow or an underflow occurs in the buffer.

Auyeung et al. teaches a factor changing process which changes the quantizing factor of each frame when an overflow or an underflow occurs in the buffer (FIG. 3, "quantization estimator **303**", Col. 5 lines 23-33).

Therefore, in view of Auyeung et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nakagawa et al.'s method and program by incorporating the method step of changing the quantization factor of each frame when an overflow or an underflow occurs in the buffer using a quantization estimator in order to provide a robust method for preventing overflow and underflow of a decoder buffer in a video compression system by a inverse relationship between multiple picture types (Col. 6 lines 9-22).

As to claim 3, Nakagawa et al. further teaches the feature information ("Activity") comprises a coding quantity ("coding amount") of each frame obtained by coding the image information, and information ("Component Activity") which specifies scenes constituting the image information (Page 714, Section 4-2 'Activity'); wherein the experimental coding process has a process which calculates a weighting value ("Scale factor K ") of each frame (Page 714, Section 4-3 'Quantization Table'); and wherein the factor changing process changes the quantizing factor, based on the calculated weighting value and the quantizing factor which is utilized in a previous experimental coding ("evaluation of images") of the frame (Page 715, Section 4-4 'Scale Factor K ').

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Suzuki et al. disclose a Method and Apparatus for Selective Control of Degree of Picture Compression, Goh et al. disclose a Method and Apparatus

Art Unit: 2624

for Video Buffer Underflow and Overflow Control, and Horie disclose a Method and Apparatus for Image Coding.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jose M. Torres whose telephone number is 571-270-1356. The examiner can normally be reached on Monday thru Friday: 8:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571-272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMT
03/14/2007

JINGGE WU
SUPERVISOR/PATENT EXAMINER

